

Montana Department of Natural Resources and Conservation
Water Resources Division
Water Rights Bureau

ENVIRONMENTAL ASSESSMENT
For Routine Actions with Limited Environmental Impact

Part I. Proposed Action Description

1. Applicant/Contact name and address: **Vescovi Polled Herefords
PO Box 333
Roundup, MT 59072**
2. Type of action: **Application to Change a Water Right 40A 30064374**
3. Water source name: **Musselshell River**
4. Location affected by project: **Sections 12, 13 & 23 T7N R24E; Sections 7 & 18 T7N R25E (all in Musselshell County)**
5. Narrative summary of the proposed project, purpose, action to be taken, and benefits: The DNRC shall issue a change authorization if an applicant proves the criteria in 85-2-402 MCA are met.

Applicant proposes to change the point of diversion from a headgate to two pump sites and convert a portion of historically flood-irrigated land to center pivot sprinkler irrigation. The claimed water rights are Statement of Claim Nos. 40A 203529 00, 40A 203531 00, 40A 203532 00, 40A 203535 00, 40A 203537 00 and 40A 206915 00 and the source is the Musselshell River. The proposal includes conversion to three center pivot sprinkler systems on 148.7 acres, with a flow rate for the new pivot systems of 3.75 CFS (one pump will serve all three pivots). Applicant will still flood irrigate 53.5 acres north of Highway 12 with a separate pump from the river (water diverted from Musselshell River into the Naderman Ditch). The flood pump capacity is 4.9 CFS (2200 GPM). The total volume of water diverted by the water rights proposed to be changed in this proceeding will be limited to the volume associated with historic use of the same water rights operated under flood irrigation. There will also be a slight modification to the place of use based on the new pivot configuration.

The project will likely result in increased water management and reduced labor on acres under the center pivot compared to the acres previously flood irrigated.

6. Agencies consulted during preparation of the Environmental Assessment:
(include agencies with overlapping jurisdiction)

**Dept. of Environmental Quality Website - TMDL 303d listing
MT. National Heritage Program Website - Species of Concern**

USDI Fish & Wildlife Service Website - Endangered and Threatened Species
MT State Historic Preservation Office - Archeological/Historical Sites
USDA Natural Resources Conservation Service – Web Soil Survey
USDI Fish & Wildlife Service – Wetlands Online Mapper
Montana Fish, Wildlife & Parks – MFISH Website

Part II. Environmental Review

1. Environmental Impact Checklist:

PHYSICAL ENVIRONMENT

WATER QUANTITY, QUALITY AND DISTRIBUTION

Water quantity - Assess whether the source of supply is identified as a chronically or periodically dewatered stream by DFWP. Assess whether the proposed use will worsen the already dewatered condition.

Determination: **No Significant Impact**

The reach of interest in the Musselshell River for this application has been identified as periodically dewatered and has been closed to most new appropriations from July 1 through September 30 by administrative rule. This change proposes to divert less water from the river to consume the same amount of water as historically used. Three new center pivot systems covering 148.7 acres will replace a portion of historic flood irrigation with 53.5 acres remaining in flood. Whereas, the Applicant will be required to measure diversion for the water rights being changed and will be limited to the same consumptive use associated with their historic flood irrigation, this project will not have a significant impact on surface water quantity.

Water quality - Assess whether the stream is listed as water quality impaired or threatened by DEQ, and whether the proposed project will affect water quality.

Determination: **No Significant Impact**

The reach of the Musselshell River adjacent to this project has been designated as needing a TMDL plan. The 2012 303d listing identifies impairments to aquatic life support probably caused by low flow alteration, riparian degradation, Nitrogen & Phosphorous levels and other habitat alterations. No significant impacts to water quality are anticipated because of this project. The conversion from flood to center pivot irrigation on a majority of historic acres could slightly improve these impairments due to decreased diversions and in turn, return flows to the river. Flood irrigation of 53.5 acres will not change.

Groundwater - Assess if the proposed project impacts ground water quality or supply. If this is a groundwater appropriation, assess if it could impact adjacent surface water flows.

Determination: **No Significant Impact**

The nature of the conversion from flood to center pivot irrigation will likely reduce the amount of water that was historically lost to groundwater via deep percolation or return flows with the flood operation; a majority of the same fields will be irrigated with a more efficient sprinkler system. Reduced diversions from the river will offset reduced return flows associated with the new pivot irrigation. Flood irrigation on 53.5 acres will not change and consumptive use of Applicant's irrigation will not increase. There should be no significant impact to groundwater quality or supply.

DIVERSION WORKS - *Assess whether the means of diversion, construction and operation of the appropriation works of the proposed project will impact any of the following: channel impacts, flow modifications, barriers, riparian areas, dams, well construction.*

Determination: **No Significant Impact**

The diversion works will consist of one flood pump and one pivot pump supplying three center pivots designed and purchased through an irrigation equipment dealer. The USDA Natural Resources Conservation Service (NRCS) Office in Roundup, Montana, provided the pivot configurations. The design summary used for the NRCS EQIP Program shows three pivots, with lengths of approximately 1,100 feet each, including end gun coverage. Applicant indicates the pump supplying the pivots has a capacity of 3.75 CFS. This equates to a flow rate of 11.3 GPM per acre, which is slightly high but still reasonable for smaller sized sprinkler irrigation systems in Montana. The pivots are equipped with a means to record the flow rate and volume of all water applied to the field. The flow regime in the Musselshell River will be modified somewhat because a portion of flood irrigation will be converted to center pivot irrigation and return flows from the new system will be reduced along with modified timing of those return flows. Operation and timing of return flows under the proposed change is not expected to have any significant impacts; the Applicant will divert less water for pivot irrigation and consume the same volume of water historically used from the source. As mentioned above, flood irrigation on 53.5 acres will not change.

UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES

Endangered and threatened species - *Assess whether the proposed project will impact any threatened or endangered fish, wildlife, plants or aquatic species or any "species of special concern," or create a barrier to the migration or movement of fish or wildlife. For groundwater, assess whether the proposed project, including impacts on adjacent surface flows, would impact any threatened or endangered species or "species of special concern."*

Determination: **No Significant Impact**

The Montana National Heritage Program website lists six animal species as Species of Concern within Township 7 North Range 24 East. Common names for these species are the Black-tailed Prairie Dog, the Greater Sage-Grouse, the Spiny Softshell (Turtle), Great Plains Toad, Plains Spadefoot and the Northern Redbelly Dace. The website lists 5 Species of Concern in Township 7 North Range 25 East, which does not include the Sage-Grouse or Plains Spadefoot, but adds the Townsend's Big-eared Bat. The site does not show any Potential Animal Species of Concern within Township 7 North Range 24 East, however two

species are listed as Potential Animal Species of Concern within Township 7 North Range 25 East, the Hayden Shrew and Plains Minnow. No plant species are listed. The USDI Fish & Wildlife Service Website shows that Musselshell County has two species listed as candidates for the Endangered Species Act; the Greater Sage-Grouse and Sprague's Pipit. The website also lists the Black-footed Ferret as endangered and the Red Knot as a proposed species in Musselshell County.

This project is not expected to impact any species listed above as the project will be located on acreage that has been previously disturbed by past agriculture practices.

Wetlands - Consult and assess whether the apparent wetland is a functional wetland (according to COE definitions), and whether the wetland resource would be impacted.

Determination: **No Significant Impact**

The acreage involved in this change application has been previously farmed and therefore, wetlands should not be impacted by this project. The USDI Fish & Wildlife Service – Wetlands Online Mapper has no data available for the area of interest.

Ponds - For ponds, consult and assess whether existing wildlife, waterfowl, or fisheries resources would be impacted.

Determination: **No Significant Impact**

This project does not involve a pond. No impact to wildlife, waterfowl, or fisheries is anticipated.

GEOLOGY/SOIL QUALITY, STABILITY AND MOISTURE - Assess whether there will be degradation of soil quality, alteration of soil stability, or moisture content. Assess whether the soils are heavy in salts that could cause saline seep.

Determination: **No Significant Impact**

Review of the USDA's Web Soil Survey indicates that 87% of the place of use is overlain with either Havre Loam 9A (11%), Harlake-Havre Complex (19%) or the Havre-Glendive Complex (57%) and is highly suitable for irrigation practices, with either no limitations, or minor limitations due to erosion. These soil types have well-drained sandy-loam to clay-loam profiles and should not contribute to saline seep, especially since this project will involve more manageable water application utilizing center pivot irrigation on a majority of historically irrigated acres.

VEGETATION COVER, QUANTITY AND QUALITY/NOXIOUS WEEDS - Assess impacts to existing vegetative cover. Assess whether the proposed project would result in the establishment or spread of noxious weeds.

Determination: **No Significant Impact**

Other than short-term effects from pipeline and pivot installation, no new disturbance of vegetative cover is expected. The acres under the new center pivots have been previously utilized for flood irrigation. It is the responsibility of the property owner to control noxious weeds on their property.

AIR QUALITY - *Assess whether there will be a deterioration of air quality or adverse effects on vegetation due to increased air pollutants.*

Determination: **No Significant Impact**

No impacts to air quality have been identified. The pumps will be powered by electric motors.

HISTORICAL AND ARCHEOLOGICAL SITES - *Assess whether there will be degradation of unique archeological or historical sites in the vicinity of the proposed project if it is on State or Federal Lands. If it is not on State or Federal Lands simply state NA-project not located on State or Federal Lands.*

Determination: **No Significant Impact**

Not Applicable – Project not located on State or Federal Lands

DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AND ENERGY - *Assess any other impacts on environmental resources of land, water and energy not already addressed.*

Determination: **No Significant Impact**

No significant impacts are anticipated. There will be an increase in electrical energy consumption associated with the changed irrigation operations.

<h2 style="text-align: center;">HUMAN ENVIRONMENT</h2>
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LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS - *Assess whether the proposed project is inconsistent with any locally adopted environmental plans and goals.*

Determination: **No Significant Impact**

No local environmental plans or goals have been identified.

ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES - *Assess whether the proposed project will impact access to or the quality of recreational and wilderness activities.*

Determination: **No Significant Impact**

The proposed action should not negatively affect recreational activities in the area.

HUMAN HEALTH - Assess whether the proposed project impacts on human health.

Determination: **No Significant Impact**

No impacts to human health have been identified.

PRIVATE PROPERTY - Assess whether there are any government regulatory impacts on private property rights.

Yes___ No X If yes, analyze any alternatives considered that could reduce, minimize, or eliminate the regulation of private property rights.

Determination: **No Significant Impact**

OTHER HUMAN ENVIRONMENTAL ISSUES - For routine actions of limited environmental impact, the following may be addressed in a checklist fashion.

Impacts on:

- (a) Cultural uniqueness and diversity? **None**
- (b) Local and state tax base and tax revenues? **None**
- (c) Existing land uses? **Flood irrigation will be converted to sprinkler irrigation.**
- (d) Quantity and distribution of employment? **None**
- (e) Distribution and density of population and housing? **None**
- (f) Demands for government services? **None**
- (g) Industrial and commercial activity? **None**
- (h) Utilities? **Pump will be powered by electric motors.**
- (i) Transportation? **None**
- (j) Safety? **None**
- (k) Other appropriate social and economic circumstances? **None**

2. *Secondary and cumulative impacts on the physical environment and human population:*

Secondary Impacts:

Department analysis indicates less return flow expected in the riparian zone along the Musselshell River due to the conversion from flood to sprinkler irrigation. The Applicant proposes to reduce flow and divert less volume with the pivot system and

as such, only the timing and location of the flow regime will be modified. Secondary impacts are expected to be minor, more water will be available in the river during periods of pivot diversion and consumptive use under the new center pivots as it relates to historic flood irrigation will not change.

Cumulative Impacts:

More and more historic flood acres are being converted to center pivot sprinkler irrigation to facilitate better water management, increased production and reduced labor. Water is more easily managed with pivot irrigation and application rates can be matched to the landowners' specific soil characteristics. Generally, acres under a center pivot system will experience increased production compared to flood acres, which in turn increases crop water consumption. In this instance, the Applicant will be limited to using the same consumptive use after conversion from flood to pivot irrigation. Although conversion from flood to pivot irrigation has the potential to allow for increased consumption and significant cumulative impacts, this specific project should not change consumptive use or add to potential cumulative impacts because the Applicant is required to measure water use and the Musselshell River is admeasured through a district court distribution project. The Applicant can also utilize Deadman's Basin contract water during periods legally stored water is available for diversion from the Musselshell.

3. *Describe any mitigation/stipulation measures:*

The Department may or may not deem specific conditions necessary to meet the statutory criteria for changes of water right set forth at § 85-2-402, MCA. These conditions would be required in the Departments' preliminary determination, if applicable.

4. *Description and analysis of reasonable alternatives to the proposed action, including the no action alternative, if an alternative is reasonably available and prudent to consider:*

No action alternative: Deny the change application. This alternative would result in no change to the existing water rights for irrigation.

PART III. Conclusion

1. *Preferred Alternative*

The preferred alternative is the proposed alternative.

2. *Comments and Responses*

None Received.

3. *Finding:*

Yes___ No X Based on the significance criteria evaluated in this EA, is an EIS required?

If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action:

None of the identified impacts for any of the alternatives are significant as defined in ARM 36.2.524

Name of person(s) responsible for preparation of EA:

Name: **Douglas Mann**

Title: **Water Resources Hydrologist**

Date: **2/14/2014**